



UGANDA NATIONAL EXAMINATIONS BOARD
PRIMARY LEAVING EXAMINATIONS
2022

MATHEMATICS

Time allowed : 2 hours 30 minutes

Random No.						Personal No.			

MUWANIKA BRIAN

Candidate's name:

Candidate's Signature:

School Random No.

District ID:

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Read the following instructions carefully:

1. Do not write your **school** or **district name** anywhere on this paper.
2. This paper has two sections **A** and **B**. Section **A** has **20 questions** and **section B** has **12 questions**. This paper has **15 pages** printed altogether.
3. Answer **all** questions. All the working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** working must be done using a **blue** or **black** ball point pen or ink. Any work done in pencil other than graphs and diagrams will **NOT** be marked.
5. **No calculators** are allowed in the examination room.
6. Unnecessary **changes** in your work and handwriting that cannot be easily read may lead to loss of marks.
7. Do not fill anything in the table indicated : "**For examiners' use only**" and the boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARKS	EXR'S NO.
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

SECTION A: 40 MARKS

Answer **all** questions in this Section

Questions **1** to **20** carry two marks each

1. Work out: $\frac{3}{5} + \frac{1}{5}$

Topic: Fractions	OR	<i>And many more other different approaches</i>
$\frac{3}{5} + \frac{1}{5} = \frac{3+1}{5}$ $= \frac{4}{5}$		

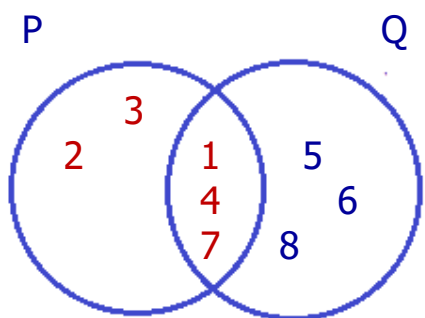
2. Write 546 in Roman numerals.

Topic: Whole numbers	OR	<i>And many more other different approaches</i>
<p>H T O</p> <p>5 4 6 = 500 + 40 + 6</p> <p style="margin-left: 100px;">D XL VI</p> <p style="text-align: center; color: red;">DXLVI</p>		

3. Work out:
$$\begin{array}{r} 127 \\ \times 3 \\ \hline \end{array}$$

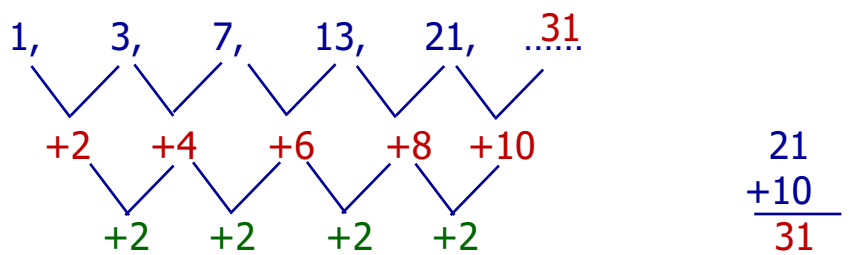
Topic: Operation on whole numbers	OR	<i>And many more other different approaches</i>												
<div><div><div>127</div><div>x 3</div><div><div></div><div></div><div></div></div><div><div>381</div></div></div><div><div>7 x 3 = 21</div><div>2 x 3 = 6</div><div>6 + 2 = 8</div><div>1 x 3 = 3</div></div></div>	<div><div>0</div><div><table><tr><td>1</td><td>2</td><td>7</td><td>x</td></tr><tr><td><div><div>0</div><div>3</div></div></td><td><div><div>0</div><div>6</div></div></td><td><div><div>2</div><div>1</div></div></td><td><div><div>3</div></div></td></tr><tr><td>3</td><td>8</td><td>1</td><td></td></tr></table></div></div>	1	2	7	x	<div><div>0</div><div>3</div></div>	<div><div>0</div><div>6</div></div>	<div><div>2</div><div>1</div></div>	<div><div>3</div></div>	3	8	1		
1	2	7	x											
<div><div>0</div><div>3</div></div>	<div><div>0</div><div>6</div></div>	<div><div>2</div><div>1</div></div>	<div><div>3</div></div>											
3	8	1												

4. Given that $P \cup Q = \{1, 2, 3, 4, 5, 6, 7, 8\}$, $P \cap Q = \{1, 4, 7\}$ and $p' = \{5, 6, 8\}$, list the elements of set P.

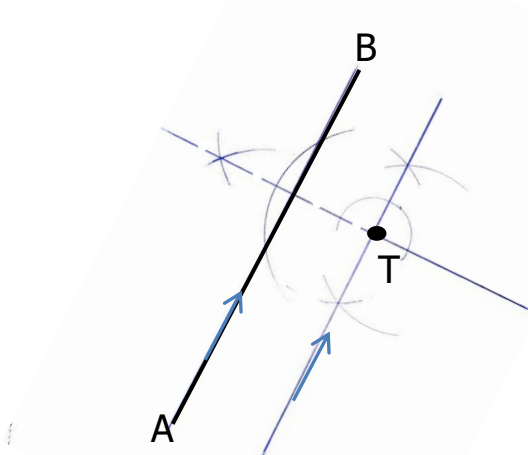
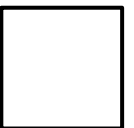
Topic: Set concepts	OR	<i>And many more other different approaches</i>
<p>$p' = \{5, 6, 8\}$</p> <p>refers to the elements that are not part of set P.</p> <p>so we shall remove set p' from the Union set and then the remaining elements will be for set P</p> <p>$P \cup Q = \{1, 2, 3, 4, \textcircled{5}, \textcircled{6}, 7, \textcircled{8}\}$</p> <p>Set P = $\{1, 2, 3, 4, 7\}$</p>	 <p>Set P = $\{1, 2, 3, 4, 7\}$</p>	

5. Find the next number in the sequence:

1, 3, 7, 13, 21,

Topic: Patterns and sequences	OR	<i>And many more other different approaches</i>
		

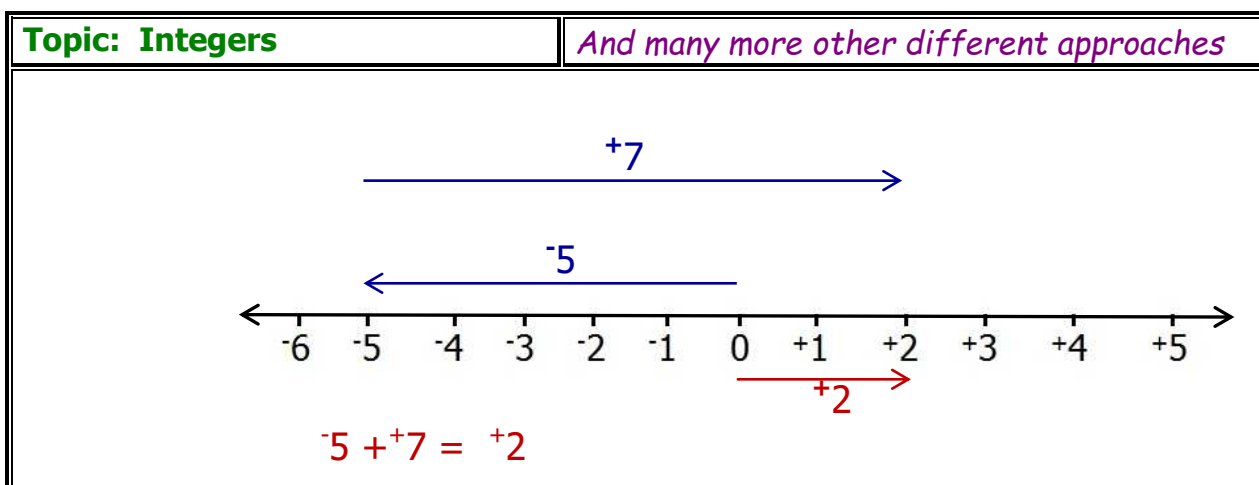
6. Using a ruler and a pair of compasses only, construct a line through point T parallel to line AB.



7. Write the number whose standard form is 7.43×10^2 .

Topic: Whole numbers	OR	And many more other different approaches
$7.43 \times 10^2 = 7.43 \times 10 \times 10$ $= 7.43 \times 100$ $= \frac{743}{100} \times 100$ $= \frac{74300}{100}$ $= 743$		$7.43 \times 10^2 = 74.3 \times 10^1$ $74.3 \times 10^1 = 743 \times 10^0$ $743 \times 10^0 = 743 \times 1$ $743 \times 1 = 743$ $= 743$

8. Represent the number operation $-5 + +7$ on the number line below.



Turn Over

9. Solve: $2a - 6 = 10$

Topic: Algebra	OR	And many more other different approaches
$2a - 6 = 10$ $2a - 6 + 6 = 10 + 6$ $2a - 0 = 16$ $2a - 0 = 16$ $2a = 16$ $\frac{2a}{2} = \frac{16}{2}$ $a = 8$		$2a - 6 = 10$ $\frac{2a}{2} - \frac{6}{2} = \frac{10}{2}$ $a - 3 = 5$ $a - 3 + 3 = 5 + 3$ $a - 0 = 8$ $a = 8$

10. A packet of biscuits weighs 200 grammes. Calculate the total weight in kilogrammes of 30 packets of biscuit.

Topic: Length, mass and capacity	OR	
<p>1 packet weighs 200 grammes 30 packets weigh (200g x 30) 30 packets weigh 6000 grammes</p> <p>1000g = 1kg</p> <p>1g = $\frac{1}{1000}$ kg</p> <p>6000g = $\frac{1}{1000}$ x 6000 kg</p> <p>6000g = $\frac{6000}{1000}$kg</p> <p>6000g = 6kg</p> <p>6 kilogrammes</p>		<p>1 packet weighs 200 grammes 1000g = 1kg</p> <p>1g = $\frac{1}{1000}$ kg</p> <p>200g = $\frac{1}{1000}$ x 200 kg</p> <p>200g = $\frac{200}{1000}$kg</p> <p>200g = 0.2kg</p> <p>1 packet weighs 0.2 kilogrammes 30 packets weigh (0.2kg x 30) = 0.2kg x 30</p> <p>= $\frac{2}{10}$ x 30 kg</p> <p>= $\frac{60}{10}$ kg</p> <p>6 kilogrammes</p>

11. The drawings below show cards with numbers written on them.



The cards were then put in a bag. Find the probability that a card picked at random from the bag has a composite number.

Topic: Data handling	OR	And many more other different approaches
<p>Probability = $\frac{\text{Number of events}}{\text{Number of sample space}}$</p> <p>Events = (4, 6, 8, 9) n(E) = 4 Sample space =(4,5,6,7,8,9) n(s.s) = 6</p>		

$$\text{Probability} = \frac{4}{6}$$

12. Work out:

$$\begin{array}{r} 1001_{\text{two}} \\ - 111_{\text{two}} \\ \hline \end{array}$$

Topic: whole numbers	OR	<i>And many more other different approaches</i>
<p>Work out:</p> $\begin{array}{r} 1 \\ 02 \\ 101_{\text{two}} \\ - 111_{\text{two}} \\ \hline 0010_{\text{two}} \end{array}$	$\begin{array}{l} 1-1 = 0 \\ 2-1 = 1 \\ 1-1 = 0 \end{array}$	

13. A poultry farmer sells 30 eggs at sh 12,000. Find the cost of 25 eggs.

Topic: Money	OR	<i>And many more other different approaches</i>
<p>30 eggs cost sh 12,000 1 egg costs (sh 12,000 ÷ 30) 1 egg costs sh 400 25 eggs cost (sh 400 x 25) 25 eggs cost sh 10,000</p>	$\begin{array}{l} \frac{\text{required}}{\text{provided}} \times \text{cost} \\ \\ = \frac{25}{30} \times \text{sh } 12,000 \\ \\ = 25 \times \text{sh } 400 \\ \\ = \text{Sh } 10,000 \end{array}$	

14. Round off 2498 to the nearest hundreds.

Topic: whole numbers	OR	<i>And many more other different approaches</i>												
<table border="1" style="margin-left: auto; margin-right: auto; text-align: center; border-collapse: collapse;"> <tr> <td style="width: 25px;"> </td> <td style="width: 25px;">R</td> <td style="width: 25px;">D</td> <td style="width: 25px;"> </td> </tr> <tr> <td>TH</td> <td>H</td> <td>T</td> <td>O</td> </tr> <tr> <td>2</td> <td>4</td> <td>9</td> <td>8</td> </tr> </table> $\begin{array}{r} 2400 \\ + 100 \\ \hline 2500 \end{array}$		R	D		TH	H	T	O	2	4	9	8		
	R	D												
TH	H	T	O											
2	4	9	8											

15. The weight of a teacher is 72 kg. The average weight of the teacher and three pupils is 50 kg. Calculate the total weight of the pupils.

Topic: Length, Mass and C	OR	<i>And many more other different approaches</i>
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Number	Average	Total
Teacher		72 kg
4	50kg	200 kg

Total weight of all including the teacher = Average weight x number

= 50 kg x 4

= 200 kg

Total weight of the pupils = 200 kg – 72 kg

= 128 kg

16. Town M is South East of town V. Find the bearing of town V from town M.

Topic: Lines, Angles and G	OR	<i>And many more other different approaches</i>
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South East is equivalent to 135° in true bearing

The bearing of town M from town V is 135°

Opposite bearing is $135^{\circ} + 180^{\circ} = 315^{\circ}$

The bearing of town V from town M is 315°

17. A businesswoman borrowed sh 100,000 from a savings group which charged her an interest rate of 3% per month. Calculate the interest she paid after a period of six months.

Topic: Fractions	OR	<i>And many more other different approaches</i>
$ \begin{aligned} \text{Interest} &= \text{Principal} \times \text{rate} \times \text{time} \\ &= \text{sh } 100,000 \times \frac{3}{100} \times 6 \\ &= \frac{\text{sh } 1800,000}{100} \\ &= \text{sh } 18,000 \end{aligned} $		

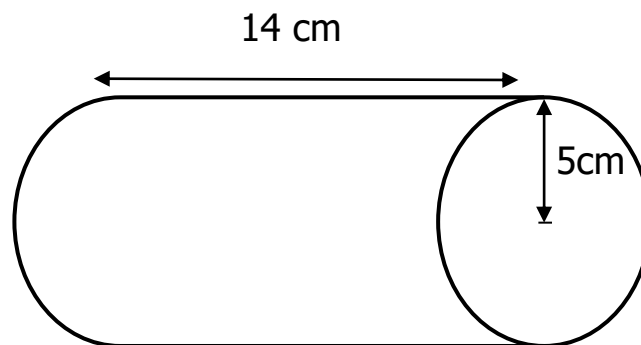
18. Peter walked a distance of 2 km in 20 minutes. Find his speed in kilometers per hour.

Topic: Time	OR	<i>And many more other different approaches</i>
<div style="display: flex; justify-content: space-between; align-items: flex-start; padding: 10px;"><div style="width: 45%;"><p>time = 20 minutes</p><p>60 minutes = 1 hour</p><p>1 minute = $\frac{1}{60}$ hours</p><p>20 minutes = $(\frac{1}{60} \times 20)$ hours</p><p>= $\frac{20}{60}$ hours</p><p>= $\frac{1}{3}$ hours</p></div><div style="width: 45%; border-left: 1px solid black; padding-left: 10px;"><p>speed = Distance \div time</p><p>= 2 km \div $\frac{1}{3}$ hours</p><p>= $\frac{2 \text{ km}}{1} \times \frac{3}{1}$ hours</p><p>= $\frac{6 \text{ km}}{1 \text{ h}}$</p><p>= 6 km/h</p></div></div>		

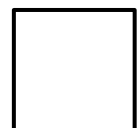
19. Given that $m = 8$ and $n = 6$, find the value of $\sqrt{mn+1}$.

Topic: Algebra	OR	<i>And many more other different approaches</i>
$= \sqrt{mn+1}$ $= \sqrt{m \times n + 1}$ $= \sqrt{8 \times 6 + 1}$		$= \sqrt{48+1}$ $= \sqrt{49}$ $= 7$

20. Calculate the volume of the cylinder below. (Use $\pi = \frac{22}{7}$)



Topic: Fractions	OR	<i>And many more other different approaches</i>
<p>Volume of a cylinder = $\pi r^2 \times h$</p> <p>= $\frac{22}{7} \times 5 \text{ cm} \times 5 \text{ cm} \times 14 \text{ cm}$</p> <p>= $\frac{22 \times 5 \text{ cm} \times 5 \text{ cm} \times 2 \text{ cm}}{1}$</p> <p>= $110 \text{ cm} \times 10 \text{ cm}^2$</p> <p>= 1100 cm^3</p>		



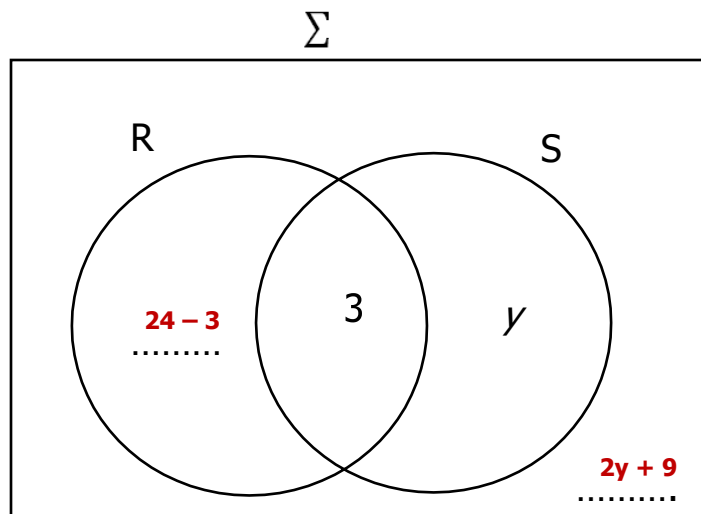
SECTION B: 60 MARKS

*Answer **all** the questions in this Section.*

Marks for each question are indicated in brackets.

21. In a village, 3 farmers grow both rice (R) and sunflower (S). 24 farmers grow rice and y farmers grow sunflower only. $2y + 9$ farmers grow none of the two crops.

- (a) Use the given information to complete the Venn diagram below. (02 marks)



- (b) Given that the number of farmers who grow rice only is equal to the number of farmers who grow none of the two crops, find the value of y . (02 marks)

Topic: Set concepts	OR	<i>And many more other different approaches</i>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> $\begin{aligned} 2y + 9 &= 24 - 3 \\ 2y + 9 &= 21 \\ 2y + 9 - 9 &= 21 - 9 \\ 2y + 0 &= 12 \\ 2y &= 12 \end{aligned}$ </div> <div style="width: 45%; border-left: 1px solid black; padding-left: 10px;"> $\begin{aligned} \frac{2y}{2} &= \frac{12}{2} \\ y &= 6 \end{aligned}$ </div> </div>		

(c) How many farmers grow sunflower?

(01 mark)

Topic: Set concepts	OR	<i>And many more other different approaches</i>
$\begin{aligned}\text{Number of farmers growing sunflower} &= 3 + y \\ &= 3 + 6 \\ &= 9\end{aligned}$		

22. A trader bought 500 mangoes at sh 250 each. The trader then sold 100 of the mangoes at sh 350 each and the rest at sh 300 each. Calculate the profit the trader made. (05 marks)

Topic: Time	OR	<i>And many more other different approaches</i>
<div>Buying price</div> <div>1 mango at sh 250</div> <div>500 mangoes at sh 250 x 500</div> <div>= sh 125,000</div>	<div>remaining mangoes</div> <div>(500- 100) = 400</div> <div>Selling price phase one</div> <div>1 mango at sh 300</div> <div>400 mangoes at sh 400 x 300</div> <div>= sh 120,000</div>	
<div>Selling price phase one</div> <div>1 mango at sh 350</div> <div>100 mangoes at sh 350 x 100</div> <div>= sh 35,000</div>		
<div>Total selling price = sh 120,000 + sh 35, 000</div> <div>= sh 155,000</div>		
<div>Profit = Selling price – Buying price</div> <div>sh 155,000</div> <div>- sh 125,000</div> <div><hr/></div> <div>= sh 030,000</div> <div><hr/></div>		

Turn Over



23. Work out: $\frac{0.75 + 0.25}{0.65 - 0.4}$

(04 marks)

Topic: Time	OR	<i>And many more other different approaches</i>
$\frac{0.75 + 0.25}{0.65 - 0.4}$	=	$\frac{1}{0.25}$
$\begin{array}{r} 0.75 \\ + 0.25 \\ \hline 1.00 \end{array}$	=	$1 \div 0.25$
$\begin{array}{r} 0.65 \\ - 0.40 \\ \hline 0.25 \end{array}$	=	$1 \div \frac{25}{100}$
	=	$\frac{1 \times 100}{1 \times 25}$
	=	$\frac{100}{25}$
	=	4

24. A motorist left his home at 7:40 a.m. and travelled to town for 3 hours at an average speed of 64 km/h. He stayed in town for 30 minutes and then travelled back home.

(a) Calculate the distance from the motorist's home to the town.

(02 marks)

Topic: Time	OR	<i>And many more other different approaches</i>
$\begin{aligned} \text{Distance} &= \text{Speed} \times \text{Time} \\ &= 64\text{km/h} \times 3 \text{ hours} \\ &= 192\text{km} \end{aligned}$		

(b) At what time did the motorist leave the town? (01 mark)

Topic: Time	OR	<i>And many more other different approaches</i>																								
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Arrival time = Start time + duration</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Hours</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td></td> <td>7</td> <td>40</td> </tr> <tr> <td>+</td> <td>3</td> <td>00</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">10</td> <td style="border-top: 1px solid black;">40 a.m.</td> </tr> </tbody> </table> </div> <div style="width: 45%;"> <p>Departure time = Start time + duration</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Hours</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td></td> <td>10</td> <td>30</td> </tr> <tr> <td>+</td> <td></td> <td>30</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">11</td> <td style="border-top: 1px solid black;">10 a.m.</td> </tr> </tbody> </table> </div> </div> <p style="text-align: right; color: red; margin-top: 10px;">He left the town at 11:10 a.m.</p>				Hours	Minutes		7	40	+	3	00		10	40 a.m.		Hours	Minutes		10	30	+		30		11	10 a.m.
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	10	40 a.m.																								
	Hours	Minutes																								
	10	30																								
+		30																								
	11	10 a.m.																								

(c) Calculate the speed at which the motorist travelled back if he reached home at 3:10 p.m. (03 marks)

Topic: Time	OR	<i>And many more other different approaches</i>																																				
<p>Duration = End time – Start time</p> <p>= 3 : 10 p.m. - 11: 10 a.m. (to 24 hours)</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Hours</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td></td> <td>3</td> <td>10</td> </tr> <tr> <td>+</td> <td>12</td> <td>00</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">15</td> <td style="border-top: 1px solid black;">10 hours</td> </tr> </tbody> </table> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Hours</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td></td> <td>15</td> <td>10</td> </tr> <tr> <td>+</td> <td>11</td> <td>00</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">04</td> <td style="border-top: 1px solid black;">00 hours</td> </tr> </tbody> </table> </div> <div style="width: 45%;"> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Hours</th> <th>Minutes</th> </tr> </thead> <tbody> <tr> <td></td> <td>11</td> <td>10</td> </tr> <tr> <td>+</td> <td>0</td> <td>00</td> </tr> <tr> <td></td> <td style="border-top: 1px solid black;">11</td> <td style="border-top: 1px solid black;">10 hours</td> </tr> </tbody> </table> <p>= 192 km ÷ 4 hours</p> <p>= 48 km ÷ 1 hour</p> <p style="color: red;">= 48 km/h</p> </div> </div> <div style="margin-top: 10px;"> <p>Time = 4 hours</p> <p>Distance = 192 km</p> <p>Speed = Distance ÷ Time</p> </div>				Hours	Minutes		3	10	+	12	00		15	10 hours		Hours	Minutes		15	10	+	11	00		04	00 hours		Hours	Minutes		11	10	+	0	00		11	10 hours
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25. The sum of the three consecutive counting numbers is 78. Find the largest number. (04 marks)

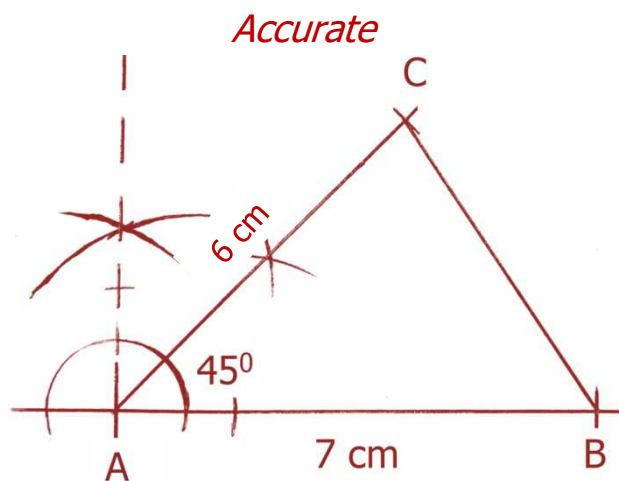
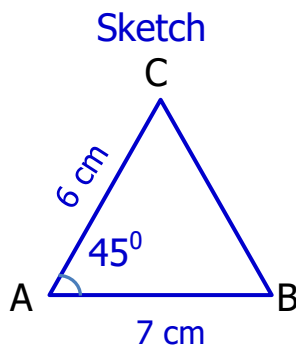
Topic: Set concepts	OR	<i>And many more other different approaches</i>
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Let the largest number be g

large	larger	largest	Total
$(g-2)$	$(g-1)$	g	78

$$\begin{aligned}
 g + g - 2 + g - 1 &= 78 \\
 g + g + g - 2 - 1 &= 78 \\
 3g - 3 &= 78 \\
 3g - 3 + 3 &= 78 + 3 \\
 3g - 0 &= 81 \\
 3g &= 81 \\
 3 &3 \\
 g &= 27
 \end{aligned}$$

26. (a) Using a ruler and a pair of compasses only, construct triangle ABC in which line AB = 7 cm, AC = 6 cm angle CAB = 45° . (04 marks)

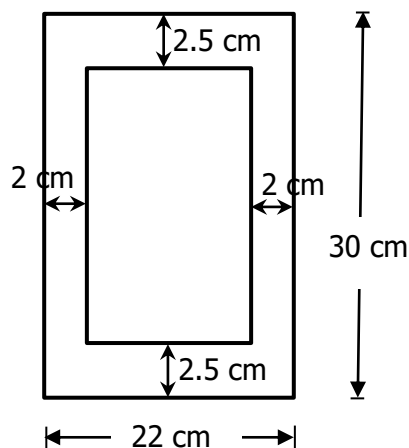


- (b) Measure angle ACB. = 77° , 78° or 79° (01 mark)

Turn Over



27. The figure below represents a photograph enclosed in a photo frame. The length of the photo frame is 30 cm and width 22 cm. The area covered by the photograph is shaded. Study the figure and use it to answer the questions that follow.



- (a) Find the length of the photograph. (02 marks)

Topic: Length mass and C	OR	<i>And many more other different approaches</i>
$ \begin{aligned} \text{Length} &= 30 \text{ cm} - (2.5 \text{ cm} + 2.5 \text{ cm}) &= 30 \text{ cm} - 5.0 \text{ cm} \\ &= 30 \text{ cm} - (5.0 \text{ cm}) &= 30 \text{ cm} - 5 \text{ cm} \\ & &= 25 \text{ cm} \end{aligned} $		

- (b) Calculate the area of the frame not covered by the photograph. (04 marks)

Topic: Length mass and C	OR	<i>And many more other different approaches</i>
$ \begin{aligned} \text{Length of the photo} &= 25 \text{ cm} \\ \text{Width of the photo} &= 22 \text{ cm} - (2 \text{ cm} + 2 \text{ cm}) \\ &= 22 \text{ cm} - 4 \text{ cm} \\ &= 18 \text{ cm} \end{aligned} $		
$ \begin{aligned} \text{Area of the photo} &= L \times W \\ &= 25 \text{ cm} \times 18 \text{ cm} \\ &= 450 \text{ cm}^2 \end{aligned} $		$ \begin{aligned} \text{Area of the frame} &= L \times W \\ &= 30 \text{ cm} \times 22 \text{ cm} \\ &= 660 \text{ cm}^2 \end{aligned} $
		$ \begin{aligned} \text{Area of the frame not covered} &= 660 \text{ cm}^2 - 450 \text{ cm}^2 \\ &= 210 \text{ cm}^2 \end{aligned} $

28. A mathematical set costs sh 2000 more than an exercise book. The cost of two exercise books is the same as $\frac{2}{5}$ of the cost of a mathematical set. Find the cost of an exercise book. (04 marks)

Topic: Set concepts	OR	<i>And many more other different approaches</i>
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Let the cost of the exercise book be h

	Exercise book	Mathematical set
	h	(h + 2000)
2 Exercise books	2h	$\frac{2}{5}$ of (h + 2000)

$$2h = \frac{2}{5} \text{ of } (h + 2000)$$

$$2h = \frac{2}{5} \times (h + 2000)$$

$$2h \times 5 = \frac{2}{5} \times (h + 2000) \times 5$$

$$10h = 2(h + 2000)$$

$$10h = 2h + 4000$$

$$10h = 2h + 4000$$

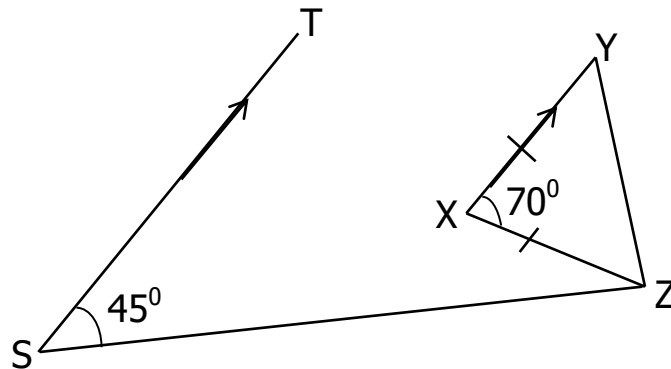
$$10h - 2h = 2h - 2h + 4000$$

$$8h = 0 + 4000$$

$$\frac{8h}{8} = \frac{4000}{8}$$

$$h = \text{sh } 500$$

29. In the figure below, line $XY = XZ$ and line TS is parallel to line XY . Angle $TSZ = 45^\circ$ and angle $YXZ = 70^\circ$. Study the figure and use it to answer the questions that follow.



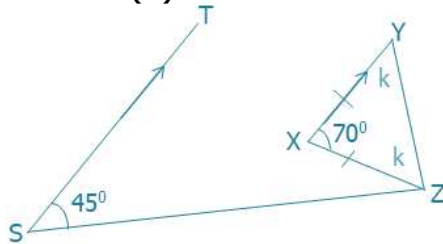
Find the size of angle;

Topic: Lines, angles and G

OR

And many more other different approaches

(a) $\angle XYZ$



Let angle $\angle XYZ$ be k

(02 marks)

Triangle XYZ is an isosceles triangle

Two base angles of an isosceles triangle are equal

Interior angles of a triangle add up to 180°

$$\begin{aligned}
 k + k + 70^\circ &= 180^\circ \\
 2k + 70^\circ &= 180^\circ \\
 2k + 70^\circ - 70^\circ &= 180^\circ - 70^\circ \\
 2k + 0 &= 110^\circ \\
 \frac{2k}{2} &= \frac{110^\circ}{2} \\
 k &= 55^\circ
 \end{aligned}$$

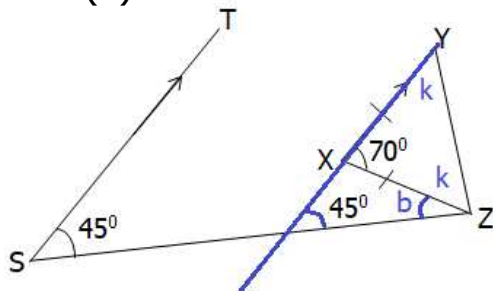
Topic: Lines, angles and G

OR

And many more other different approaches

(b) $\angle SZX$

(03 marks)



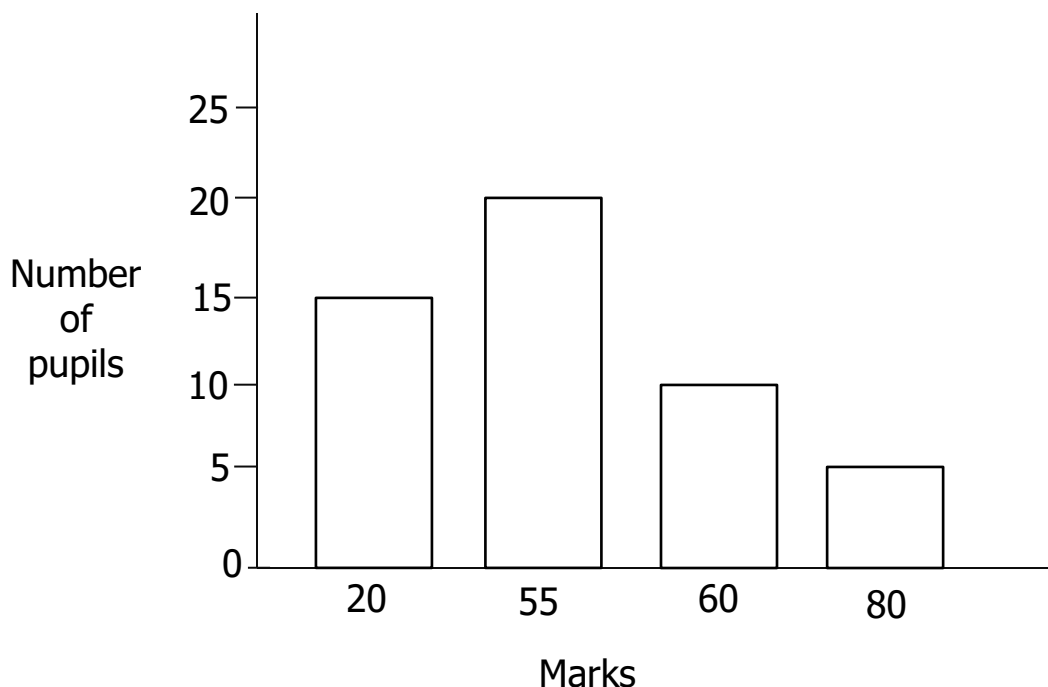
Let angle $\angle SZX$ be b

Two interior angles of a triangle

Add up to one opposite exterior

$$\begin{aligned}
 b + 45^\circ &= 70^\circ \\
 b + 45^\circ - 45^\circ &= 70^\circ - 45^\circ \\
 b + 0 &= 25^\circ \\
 b &= 25^\circ
 \end{aligned}$$

30. The bar graph below shows marks scored by pupils in a test. Study the graph and use it to answer the questions that follow.

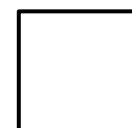


- (a) Find the number of pupils who did the test. (02 marks)

Topic: Data handling	OR	<i>And many more other different approaches</i>										
<table><tr><td>Marks</td><td>20</td><td>55</td><td>60</td><td>80</td></tr><tr><td>Number of pupils</td><td>15</td><td>20</td><td>10</td><td>5</td></tr></table> <p>= (15 + 20 + 10 + 5) pupils = 50 pupils</p>			Marks	20	55	60	80	Number of pupils	15	20	10	5
Marks	20	55	60	80								
Number of pupils	15	20	10	5								

- (b) Calculate the mean mark of the pupils. (03 marks)

Topic: Data handling	OR	<i>And many more other different approaches</i>
<p> Mean mark = $\frac{\text{Sum of marks}}{\text{Total number of pupils}}$ </p> <div style="display: flex; justify-content: space-between;"> <div> $= \frac{(20 \times 15) + (55 \times 20) + (60 \times 10) + (80 \times 5)}{50}$ </div> <div> $= \frac{300 + 1100 + 600 + 400}{50}$ $= \frac{2400}{50}$ $= 48$ </div> </div>		



31. A company supplied text books to three schools; F, G and H in the ratio 4:6:5 respectively. School F received 72 books less than school G.

(a) Find the number of text books supplied by the company.

(03 marks)

Topic: Fractions	OR	<i>And many more other different approaches</i>		
School	F	G	H	Total
	4 parts	6 parts	5 parts	15 parts

Difference between G and F = 6 parts – 4 parts
= 2 parts

Total parts are 15

2 parts represent 72 books
1 part represents 72 books ÷ 2
1 part represents 36 books

1 part represents 36 books
15 part represent 36 books x 15
15 part represent 540 books

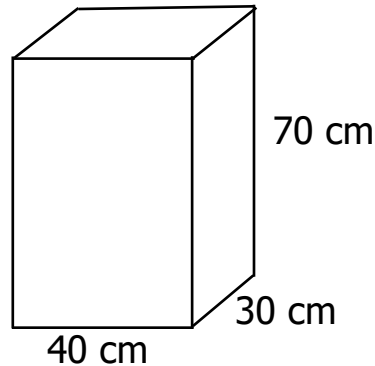
540 text books were supplied by the company

(b) Calculate the number of books school H got ?

(02 marks)

Topic: Fractions	OR	<i>And many more other different approaches</i>
<p>School H got 5 parts 1 part represents 36 books 5 parts represents 36 books x 5 5 part represents 180 books School H got 180 books</p>		

32. The diagram below shows a tank full of water. The water leaks at a rate of 1.5 litres per hour. Study the diagram and use it to answer the questions that follow.



- (a) Find the capacity of the tank in litres.

(02 marks)

Topic: Length, mass and capacity	OR	And many more other different approaches
Volume of a cuboid $= L \times w \times h$ $= 40 \text{ cm} \times 30 \text{ cm} \times 70 \text{ cm}$ $= 84000 \text{ cm}^3$		$1000 \text{ cm}^3 = 1 \text{ litre}$ $1 \text{ cm}^3 = \frac{1}{1000} \text{ litre}$ $84000 \text{ cm}^3 = \frac{1}{1000} \times 84000 \text{ litres}$ $84000 \text{ cm}^3 = \frac{84000}{1000} \text{ litres}$ $= 84 \text{ litres}$

- (b) Calculate;

- (i) the amount of water in litres that will leak out of the tank in 12 hours.

(01 mark)

Topic: Length, mass and capacity	OR	And many more other different approaches
In 1 hour, 1.5 litres leaks. In 12 hours, 1.5×12 litres $= \frac{15}{10} \times 12 \text{ litres}$		$= \frac{180}{10} \text{ litres}$ $= 18 \text{ litres}$

- (ii) the height of water that remains in the tank after 12 hours.

(03 marks)

Topic: Length, mass and c

OR

And many more other different approaches

Full capacity = 84 litres

Number of litres lost in 12 hours is 18 litres

New capacity = (84 - 18) litres
= 66 litres

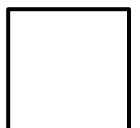
1 litre = 1000 cm³
66 litres = 66 x 1000 cm³
66 litres = 66000 cm³

Volume = L x w x h
66000 cm³ = 40 cm x 30 cm x h
66000 cm³ = 1200 cm² x h

$\frac{66000 \text{ cm}^3}{1200 \text{ cm}^2} = \frac{1200 \text{ cm}^2 \times h}{1200 \text{ cm}^2}$

$\frac{55 \text{ cm}}{1} = \frac{1 \times h}{1}$

55 cm = h
h = 55 cm



Note:

All the questions have different ways of attempting them.
Just a few were used.

Each question has different ways of approaching it.

Weekly topical questions are to be released

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Kindly forward to others, lets help learners practice Mathematics